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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,289	09/29/2003	William F. Micka	TUC920030045US1	5437
49080	7590	09/18/2006	EXAMINER	
DALE F. REGELMAN 4231 S. FREMONT AVENUE TUCSON, AZ 85714			TIMBLIN, ROBERT M	
			ART UNIT	PAPER NUMBER
			2167	

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/675,289	Applicant(s) MICKA ET AL.	
	Examiner Robert M. Timblin	Art Unit 2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action corresponds to application 10/675,289 and applicant's remarks filed 6/28/2006.

Response to Amendment

Drawings

The examiner has reviewed corrections to the drawings and accordingly accepts the amendments made. Objections to the drawings are withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beal et al. ("Beal" hereinafter) (US 5,155,845) in view of Conchran et al. ("Conchran" hereinafter) (US 2002/0230859).

With respect to claims 17, and 13, **Beal** discloses A method to coordinate interconnected information storage and retrieval systems, wherein each of the information and storage systems is capable of communicating with one or more host computers, comprising the steps of:

‘providing a host computer’ (drawing 101).

providing a plurality information storage and retrieval systems (drawing references 111-n, 111-0, 109-n and 109-0) , **wherein each of said plurality of information storage and retrieval systems is interconnected with each of the other information storage and retrieval systems** (drawing reference 106, 110, 108) **is interconnected with said host computer** (drawing reference 101, 102, 104); **and wherein each of said information storage and retrieval systems is interconnected with a different remote storage location**’ (col. 8 line 25-39; col. 14, line 21-38; figs. 1-4).

‘providing a plurality of controllers, wherein one or more of said plurality of controllers is disposed in each of said one or more information storage and retrieval systems’ as DASD subsystem comprises a plurality of data storage control units (DSC) (col. 2, lines 60-67).

‘designating by said host computer (drawing reference 101) **one of said plurality of controllers as a master controller and the remaining controllers as target controllers’** as a write request received by one control unit to cause one volume in each set of recording means to write a copy of the received record (abstract). Also, the primary DSC causes a duplicate copy of the data record to be written onto the disk units of the other DSC (col. 4, lines 25-40).

‘generating one or more master controller commands by said master controller’ as a write command from a host sent to a primary DSC which in turn gets sent to other DSC (col. 4, lines 20-42).

Beal fails to disclose the limitation of providing said one or more master controller commands to each of said target controllers, wherein said one or more master controller commands cause said target controllers to adjust the flow of data into and out of each of said one or more information storage and retrieval systems.

Cochran, however, discloses

‘providing said one or more master controller commands to each of said target controllers, wherein said one or more master controller commands cause said target controllers to adjust the flow of data into and out of each of said one or more information storage and retrieval systems’ as suspending communications or canceling all accesses including reads and writes to the mirrored volumes’ (0028 and fig 4).

It would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the teaching of Cochran would have given Beal’s system a method so that data at the downstream end of the asynchronous link is not corrupted or unusable for purposes of disaster recovery in the event of lost data centers (0028).

The limitations of claims 7 and 13 have been rejected for the same reasons as this claim.

With respect to claims 2, 8, and 14, Sparks discloses **‘one or more master controller commands causing each of said target controllers to stop accepting write operations from said one or more host computers’** as the suspending operation (0028).

With respect to claims 3, 9, and 15, Cochran discloses **‘each of said target controllers to form one or more consistency groups’** as maintaining consistency groups (0053).

With respect to claims 4, 10, and 16, Cochran discloses **'causing each of said target controllers to stop providing data to said one or more remote storage locations'** as the suspending operation (0028).

With respect to claims 5, 11, and 17, Beal discloses **'providing a host computer policy command to said master controller'** as a host specifying a multiple copy service

'providing at a first time by said master controller to each target controller one or more first master controller commands' as a sequence of commands (col. 19, lines 34-50).

'providing at a second time by said master controller to each target controller one or more second master controller commands' as a sequence of commands (col. 19, lines 34-50).

With respect to claims 6, 12, and 18, Beal discloses **'providing status information to said master controller by each target controller'** as the host is notified of the completion of the execution of the write command (col. 3, lines 30-42).

With respect to claims 19 and 20, the limitations of these claims have been rejected for the same reasons as that of claims 1, 3, and 6, in view of the combination of **Beal/Cochran** since they contain essentially the same subject matter.

Response to Arguments

Applicant's arguments filed 6/28/06 have been fully considered but they are not persuasive.

The applicant argues on page 11-12 that the Beal nor Cochran references singly or in combination teach or suggest a storage system comprising a plurality of information storage and retrieval systems, wherein each of the plurality of information storage and retrieval systems is interconnected with each of the other information storage and retrieval systems, wherein each of the plurality of information storage and retrieval systems is interconnected with the same host computer, and wherein each of the information storage and retrieval systems is interconnected with a different remote storage location.

The examiner respectfully disagrees as Beal teaches this limitation. Specifically, as seen above in the rejection of claims 1, 7 and 13, Beal teaches suggest a storage system (figure 1 or 2) comprising a plurality of information storage and retrieval systems (113, 112, 111, 109, 105, 107), wherein each of the plurality of information storage and retrieval systems is interconnected with each of the other information storage and retrieval systems (106, 110, 108), wherein each of the plurality of information storage and retrieval systems is interconnected with the same host (102, 104) computer, and wherein each of the information storage and retrieval systems is interconnected with a different remote storage location (111, 109). Furthermore the two disk drives involved on a copy operation comprise a local device and a remote device (col. 14 line 21-38; col. 8 line 14-29).

With respect to the argument found on page 12 that the Cochran reference teaches away from applicant's claims 1, 7, and 13, the Examiner disagrees.

Art Unit: 2167

The Examiner submits one of ordinary skill in the art could utilize the teachings of Cochran because as shown in figure 1 of Cochran, the system *can* be used with a plurality of information storage and retrieval systems. As shown in figure 1 of Cochran, a host (110) is interconnected with 'a plurality of storage and retrieval systems' (100, 102, 104, 106; data centers; also paragraph [0027]).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Leslie Wong



Primary Examiner

Robert M. Timblin



Patent Examiner AU-2167

RMT
9/11/06